Proximate Determinants of Fertility Estimation Tool: Input Data Guide

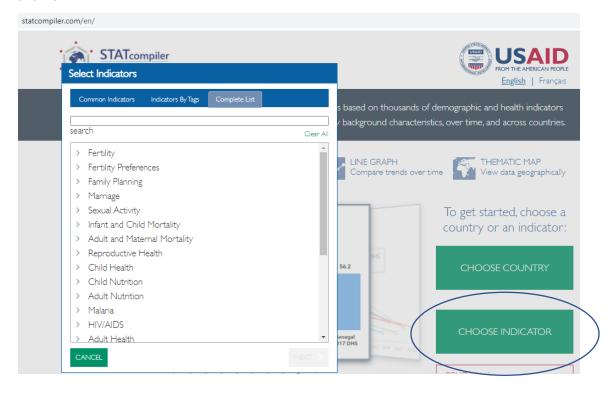
International Programs Center, Population Division, U.S. Census Bureau census.gov/internationalprograms

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1. Introduction

The following document will guide you through finding and accessing data needed for the U.S. Census Bureau's Proximate Determinants of Fertility Estimation Tool. The guide focuses on how to access variables in the Demographic and Health Survey (DHS) STATCompiler¹, which provides most required inputs, and presents the variables in an order and format that is consistent across survey countries and over survey years. The few DHS variables that are not available in the STATCompiler are provided in DHS reports. There are also two input variables which cannot be accessed from DHS products—abortion rates and independent total fertility rates—so recommended sources for these are provided as well. Input variables which have no data to represent them can be left blank in the tool. This often occurs for abortion and specific types of contraception methods. Excluding accounts of such variables in most populations will not adversely impact the reliability of the model's results because abortion rates and population-specific use of some contraception methods tend to be markedly low, relative to other proximate determinant variables. However, if information is missing for variables such as age-specific fertility rates and contraception prevalence for methods commonly used in a population, it is recommended to refrain from using this tool in its entirety, as the absence of these variables will render the models ineffective in gauging the impacts of proximate determinants on fertility levels.

This guide starts from the STATCompiler home page. On that page, first click the "CHOOSE INDICATOR" button (right side of the STATCompiler landing page) and then click the "Complete List" button in the pop-up window.



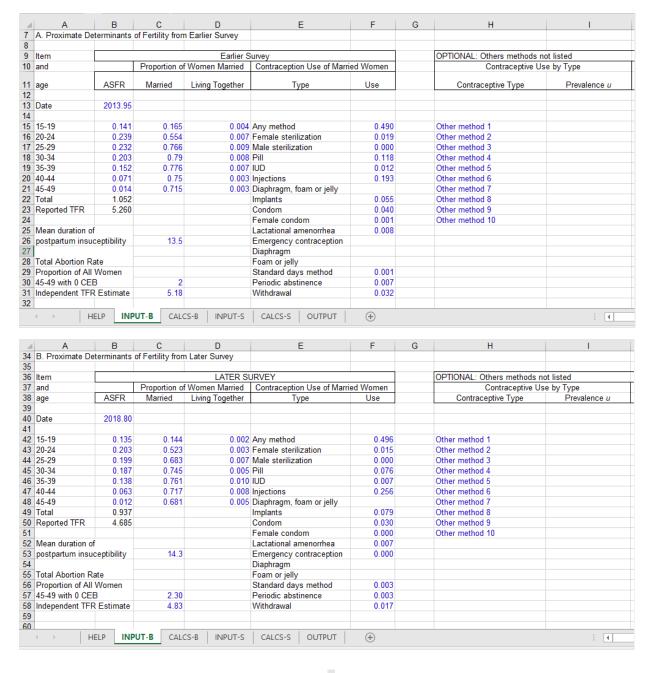
¹ You can access the STATCompiler at https://www.statcompiler.com/en/. Introductory tutorials are available at https://dhsprogram.com/data/STATcompiler.cfm.

The DHS survey reports—which are needed to provide some variables unavailable in STATCompiler—are located at: https://dhsprogram.com/search/index.cfm?bydoctype=publication&bypubtype=5

For details on the indices calculated and models applied in the Proximate Determinants of Fertility Tool, see technical documentation, ProxDet_1.0.docx. For more information on placement of input and generating intermediate calculations and output, see the "HELP" sheet in the first tab of the ProxDet_1.0 workbook.

2. Finding Data for Bongaarts Model Variant

Variables for implementing the Bongaarts model variant are input in tool sheet "INPUT-B," excerpts of which are displayed below:



2.1. Date (cells B13 and B40)

The survey reference date can be estimated with information in the introductory sections of DHS reports under the heading of "Fieldwork." We recommend to approximate and convert the survey fieldwork period—usually several months—to its midpoint decimal date. An example of the DHS report introductory section containing the fieldwork dates, from which a midpoint, survey reference date can be approximated, is below.

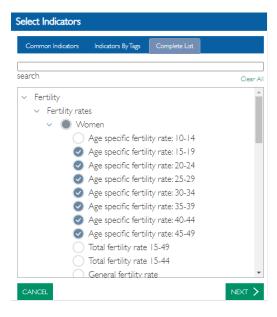
1.12 FIELDWORK

The survey was undertaken by 24 field teams. The 24 interviewing teams carrying out data collection each consisted of one supervisor (team leader), one field editor, three female interviewers, two male interviewers, two nurses/nurse counsellors, one laboratory technician, and one driver. Four senior staff members from the CSO, assisted by seven other staff members, coordinated supervision of fieldwork activities. Three staff members from UNZA assisted in field supervision and monitoring. In addition, two ICF International staff members conducted field supervision activities. To monitor implementation of the 2013-14 ZDHS biomarker components, laboratory staff from the TDRC and UTH Virology periodically supervised and monitored field laboratory technicians with respect to their compliance with survey biomarker procedures. Data collection took place over an eight-month period, from August 2013 to April 2014.

2.2. Age-specific fertility rates (ASFRs)

These instructions reference cells B15-B21 and B42-B48.

- From the STATCompiler "Complete List" of indicators described previously, select "Fertility" ->
 "Fertility rates" -> and then all variables from "Age specific fertility rate: 15-19" to "Age specific
 fertility rate 45-49".
- Values will need to be divided by 1,000 before being inputted into the tool.

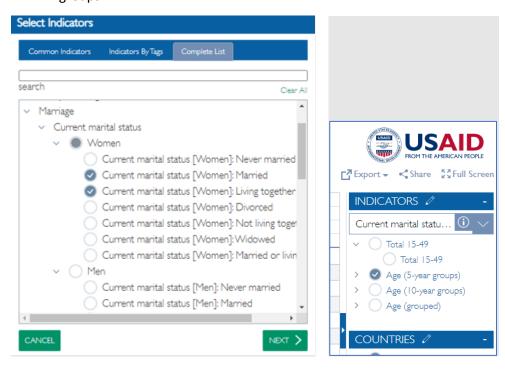


² Throughout this document, we use the following DHS survey for illustrative purposes: Zambia Statistics Agency, Ministry of Health (MOH) Zambia, and ICF. 2019. *Zambia Demographic and Health Survey 2018*.

2.3. Proportions married and living together by 5-year age groups

These instructions reference cells C15-C21, D15-D21, C42-C48, and D42-D48.

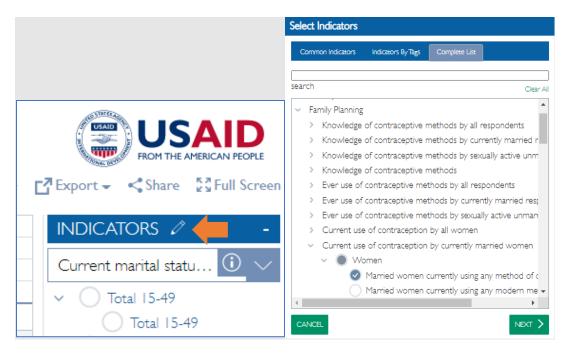
- From the "Complete List" of indicators, select "Marriage" -> "Current marital status" -> "Women". (The selection of "Women" will automatically fill in the radial buttons for all categories of this variable.)
- Click "Next" at the bottom of the "Select Countries" window. The window will then show a selection of country(ies) having DHS surveys.
- After selecting your country(ies), click "Next". The STATCompiler will then transition to a preliminary display of the required input data.
- On the right side of the screen, select "Current Marital Status [Women]: Married" from the dropdown menu below "INDICATORS".
- Then, select "Age (5-year groups)". The table now shows marital status data in 5-year age groups.



2.4. Contraception use, married women

These instructions reference cells F15-F31, I15-I24 (optional), F42-F58, and I42-I51 (optional).

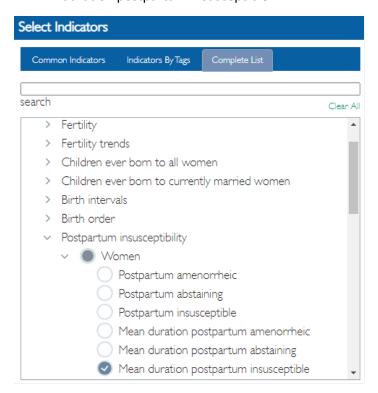
- From the "Complete List" of indicators, select "Family Planning" -> "Current use of contraception by currently married women" -> and then all variables from "Married women currently using any method of contraception" to "Married women currently using withdrawal".
 - Note: If you have already proceeded to the preliminary data display (as described in previous steps), click the "Edit" button next to the word "INDICATORS" on the right side of the page to return to the "Complete List".



2.5. Mean duration of postpartum insusceptibility

These instructions reference cells C26 and C53.

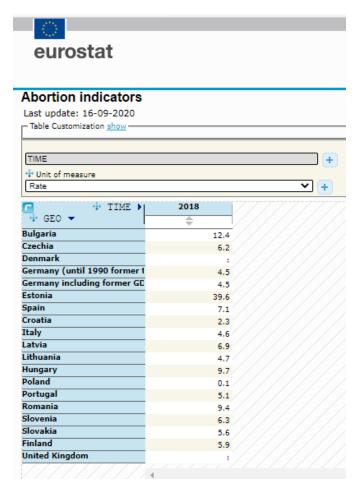
• From the Complete List of indicators, select "Fertility" -> "Postpartum insusceptibility" -> "Mean duration postpartum insusceptible".



2.6. Total abortion rate

These instructions reference cells C28 and C55.

DHS measures abortion for only a limited number of countries, and the data are not available in the STATCompiler. Abortion data tend to be more readily available in higher income countries. For EU countries, for example, the European Commission's Eurostat database³ provides regularly updated abortion rate data.



We recommend scientific journals⁴ and other reputable sources for researching abortion rates on an individual country basis for lower income countries that tend not to generate abortion statistics regularly. Another source for when individual country data are not available is the Guttmacher Institute⁵, which publishes regional estimates of abortion worldwide.

³http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=demo fabortind&lang=en

⁴ E.g., Bearak et al. < http://www.thelancet.com/journals/langlo/article/PIIS2214-109X1730453-9/fulltext or Singh et al. < https://www.thelancet.com/journals/langlo/article/PIIS2214-109X1730453-9/fulltext

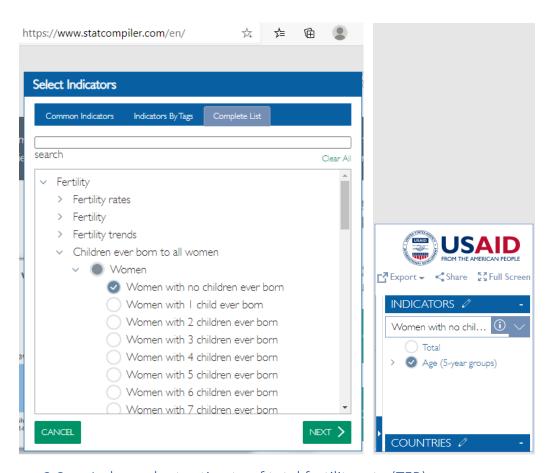
⁵ Guttmacher Institute. 2020. "Unintended pregnancy and abortion rates, by region, 2015–2019." https://www.guttmacher.org/fact-sheet/induced-abortion-worldwide

https://www.guttmacher.org/fact-sheet/induced-abortion-worldwide				
Unintended pregnancy and abortion rates, by region, 2015-2019				
	Unintended pregnancy		Abortion	
	Rate	80% uncertainty interval	Rate	80% uncertainty interval
World	64	60 to 70	39	35 to 44
Sub-Saharan Africa	91	86 to 96	33	29 to 38
Western Asia and Northern Africa	86	67 to 114	53	34 to 78
Central and Southern Asia	64	59 to 70	46	42 to 51
Eastern and Southeast Asia	58	48 to 73	43	34 to 54
Latin America and the Caribbean	69	61 to 79	32	25 to 41
Europe and Northern America	35	33 to 39	17	15 to 20
Australia and New Zealand	38	32 to 45	15	12 to 19
Oceania (excluding Australia and New Zealand)	78	58 to 113	34	16 to 66

2.7. Proportion of all women 45-49 with 0 children ever born (CEB)

These instructions reference cells C30 and C57.

- From the "Complete List" of indicators, select "Fertility" -> "Children ever born to all women" -> "Women with no children ever born".
 - Note: If you have already proceeded to the preliminary data display (as described in previous steps), click the "Edit" button to next to the word "INDICATORS" on the right side of the page to return to the "Complete List".
- Click "Next" at the bottom of the "Select Countries" window. The window will then show a selection of country(ies) having DHS surveys.
- After selecting your country(ies), click "Next". The STATCompiler will then transition to a preliminary display of the required input data.
- On the right side of the screen, select "Women with no children ever born" from the dropdown menu below "INDICATORS".
- Then, select "Age (5-year groups)". This selection will then provide the requisite measure of 0 CEB for age group 45-49, specifically.



2.8. Independent estimate of total fertility rate (TFR)

These instructions reference cells C31 and C58.

Independent total fertility rate (TFR) estimates are available from several sources, including national statistics offices, the United Nations World Population Prospects⁶, and the U.S. Census Bureau's International Data Base (IDB)⁷. An excerpt of TFR data from the IDB for the year 2021 is shown below.



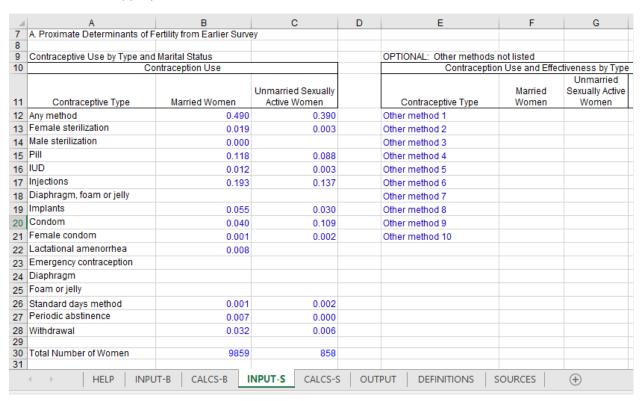
⁶ The UN World Population Prospects are available online at https://population.un.org/wpp/

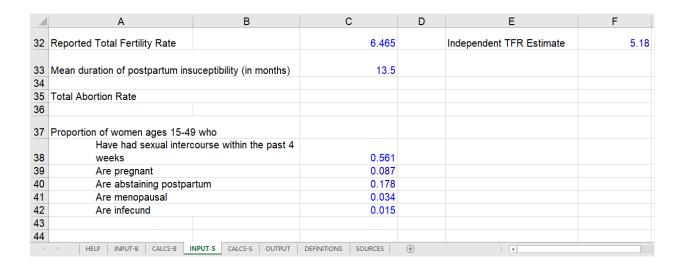
⁷ This link will provide TFR for the year 2021 for all countries and areas in the Census Bureau's International Data Base: https://www.census.gov/data-

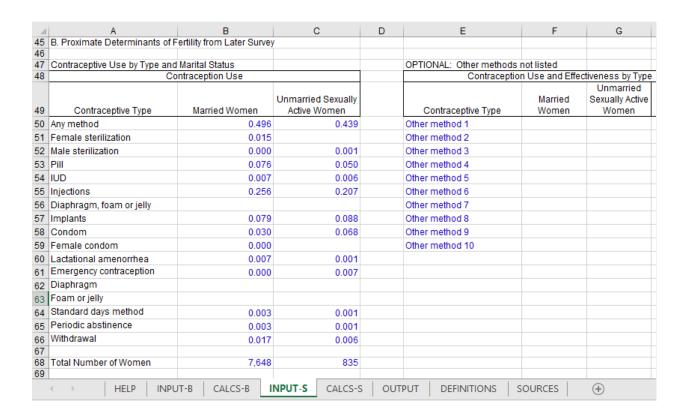
tools/demo/idb/#/table?COUNTRY_YR_ANIM=2021&menu=tableViz&quickReports=CUSTOM&CUSTOM_COLS=TF_R

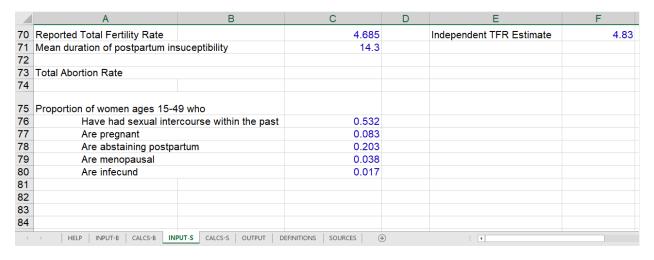
3. Finding Data for Stover Model Variant

Variables for implementing the Stover variant are input in tool sheet, "INPUT-S," excerpts of which are displayed below. Where data download procedures are the same as in the Bongaarts variant, we make references to the appropriate section elsewhere in this document.









3.1. Contraception use, married women

These instructions reference cells C12-C28 and C50-C66. Please see section 2.4 for guidance on downloading these data.

3.2. Total number of married women and non-married sexually active women These instructions reference cells B30, C30, B68, and C68.

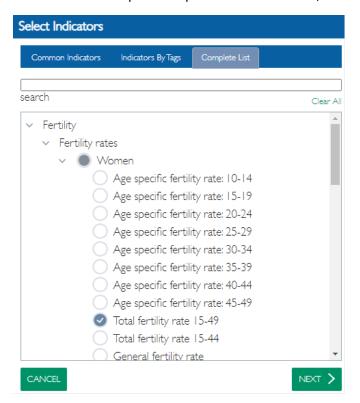
This variable is not available directly from the STATCompiler. However, you can access from DHS reports in tables on "Current use of contraception". An example of this table is below:

Table 7.2 Current use of contraception by age Percent distribution of all women, currently married women, and sexually active unmarried women age 15-49 by contraceptive method currently used, according to age, Zambia 2013-14 Any traditional currently Number modern sterili-Days Method IUD method condom condom LAM method Total of women ALL WOMEN 15-19 20-24 25-29 30-34 35-39 40-44 89.4 65.4 53.0 52.0 54.0 55.8 3,625 3,006 2,813 2,475 2,009 1,464 10.6 34.6 47.0 48.0 46.0 44.2 10.2 33.0 43.8 44.5 42.1 38.2 5.1 18.0 21.2 17.9 14.6 11.2 100.0 100.0 100.0 100.0 0.0 0.2 0.8 2.2 5.8 0.0 0.3 1.2 1.4 1.7 1.6 1.0 4.0 5.4 5.9 6.4 5.0 2.4 1.9 3.3 4.0 4.3 5.4 4.0 2.7 0.0 0.0 0.1 0.0 0.1 0.6 0.0 0.1 0.1 0.3 0.0 0.0 0.3 1.6 3.1 3.5 3.9 6.0 3.9 0.0 0.1 0.4 0.4 0.7 1.3 0.0 0.1 0.4 0.5 0.9 1.4 1.7 6.5 10.7 13.2 11.1 9.7 0.1 0.0 0.0 0.1 0.1 0.0 0.5 0.4 0.3 2.8 2.7 3.8 100.0 100.0 22.1 0.9 0.1 0.9 4.2 3.5 0.1 0.5 0.1 2.7 35.1 1.3 8.0 13.8 0.1 2.0 0.3 64.9 100.0 16,411 Total CURRENTLY MARRIED WOMEN 15-19 20-24 25-29 30-34 35-39 40-44 45-49 20.9 25.3 24.1 19.8 16.4 13.2 62.5 53.2 47.5 47.5 48.0 48.0 100.0 100.0 100.0 100.0 100.0 100.0 37.5 46.8 52.5 52.5 52.0 52.0 6.4 9.4 12.5 15.1 13.1 11.5 0.0 0.2 0.9 2.5 6.2 7.3 2.6 5.3 5.7 6.0 7.0 5.7 0.0 0.2 0.5 0.5 0.9 1.8 1.0 0.0 0.2 1.0 1.7 2.0 1.5 0.3 0.0 0.0 0.0 0.2 0.2 1.2 1.0 1.2 0.6 0.5 0.4 0.0 1.7 2.7 4.0 3.8 4.9 7.8 0.0 0.2 0.1 0.2 0.5 1.1 1.9 4.4 2.9 3.6 4.1 5.4 4.8 1,684 0.0 0.0 0.0 0.0 0.0 0.3 0.0 0.0 2,181 1,976 1,572 1,102 3.5 5.0 2.5 7.9 1.3 4.3 3.2 3.1 0.1 0.1 0.0 0.2 5.3 67.1 100.0 730 49.0 44.8 1.9 11.8 1.2 19.3 5.5 4.0 0.1 0.8 0.1 0.1 4.3 0.7 3.2 0.4 51.0 100.0 9,859 Total SEXUALLY ACTIVE UNMARRIED WOMEN¹ 15-19 3.1 11.8 9.0 16.0 10.4 296 4.1 5.2 5.4 4.3 20-24 25-29 30-34 35-39 48.0 51.0 56.1 59.1 0.0 0.0 0.0 0.0 0.0 0.9 1.2 0.0 19.8 18.3 17.6 20.1 1.0 1.0 5.8 0.0 0.0 0.0 0.0 0.0 0.0 1.0 4.1 0.0 52.0 49.0 43.9 40.9 100.0 100.0 100.0 100.0 0.6 1.0 198 128 95 77 44 20 50.0 50.3 59.1 (39.5)(39.2) (17.9)(9.7)(0.0)(6.4)(0.0)(0.0)(0.0)(0.0)(0.4) (0.0)(0.0)(0.4) (60.5)1.3 Total 39.0 0.2 0.4

3.3. Reported total fertility rate (TFR)

These instructions reference cells C32 and C70.

From the STATCompiler Complete List of indicators, select "Fertility rates" -> "Total fertility rate 15-49".



3.4. Independent estimate of total fertility rate (TFR)

These instructions reference cells F32 and F70. Please see section 2.8 for guidance on downloading these data.

3.5. Mean duration of postpartum insusceptibility

These instructions reference cells C33 and C71. Please see section 2.5 for guidance on downloading these data.

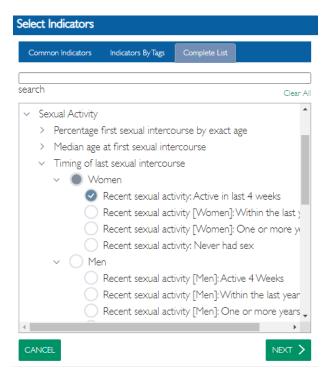
3.6. Total abortion rate

These instructions reference cells C35 and C73. Please see section 2.6 for guidance on downloading these data.

3.7. Have had sexual intercourse within the past 4 weeks

These instructions reference cells C38 and C76.

From the STATCompiler Complete List of indicators, select "Sexual Activity" -> "Recent sexual activity: Active in last 4 weeks".



3.8. Are pregnant

These instructions reference cells C39 and C77.

From the Complete List of indicators, select "Fertility" -> "Percentage of women currently pregnant".



3.9. Are abstaining postpartum

These instructions reference cells C40 and C78.

From the Complete List of indicators, select "Fertility" -> "Postpartum insusceptibility" -> "Postpartum abstaining".



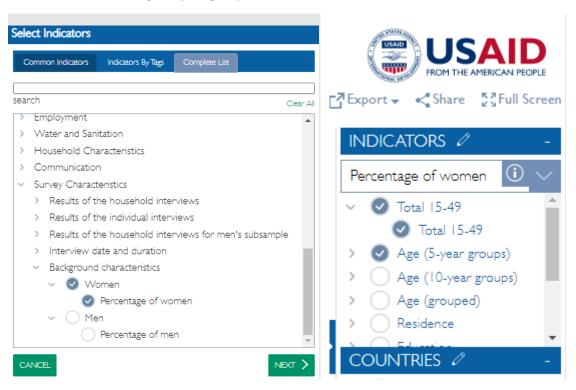
3.10. Are menopausal

These instructions reference cells and C41 and C79.

Two variables need to be selected from the STATCompiler and then multiplied. The first variable is the proportion of women ages 30-49 who are menopausal. The second is the proportion of women ages 30-49.

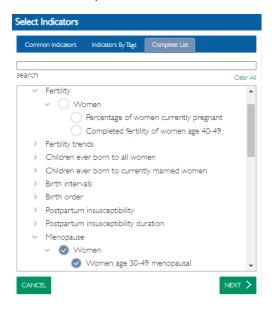
For the first variable:

- From the "Complete List" of indicators, select "Survey characteristics" -> "Percentage of women". After this series of selections is made, the STATCompiler will transition to a country list page, where a selection of country(ies) having DHS surveys is made. (The intermediate category of "Women" is automatically selected.)
 - Note: If you have already proceeded to the preliminary data display (as described in previous steps), click the "Edit" button to next to the word "INDICATORS" on the right side of the page to return to the "Complete List".
- Click "Next" at the bottom of the "Select Countries" window. The window will then show a selection of country(ies) having DHS surveys.
- After selecting your country(ies), click "Next". The STATCompiler will then transition to a preliminary display of the required input data.
- On the right side of the screen, select "Percentage of women" from the dropdown menu below "INDICATORS".
- Then, select "Age (5-year groups)".



For the second variable:

• From the "Complete List" of indicators, select "Fertility" -> "Menopause" -> "Women age 30-49 menopausal".



To obtain the input: sum percentages of age groups 30-49 from the first selection, then multiply the result by the second variable.

(∑Percentages of age groups 30-49) * Women age 30-49 menopausal

3.11. Are infecund

These instructions reference cells C42 and C80.

From the Complete List of indicators, select "Fertility Preferences" -> "Desire for children" -> "Desire for more children: Declared infecund".

